Correspondence

The Editorial Board will be pleased to receive and consider for publication correspondence containing information of interest to physicians or commenting on issues of the day. Letters ordinarily should not exceed 600 words, and must be typewritten, double-spaced and submitted in duplicate (the original typescript and one copy). Authors will be given an opportunity to review any substantial editing or abridgement before publication.

Normotensive Pheochromocytoma

TO THE EDITOR: In the recent article by Kirby and co-workers[1] a case of pheochromocytoma is described in detail and the expanding spectrum of paraneoplastic syndromes associated with this tumor is discussed. Of particular interest in the case was the presence of normotension in a disease usually characterized by hypertension. The authors provide possible pharmacological bases for this phenomenon. They suggest that tissue receptors may become tolerant to catecholamines or that the concomitant production of dopamine and dopa by the tumor may modulate the hypertensive effects of norepinephrine. While I do not disagree with this explanation, I intend to present other potential factors that may account for this phenomenon and possibly other paraneoplastic syndromes associated with this tumor.

One of the richest sources of endogenous opioids (endorphins/enkephalins) is the adrenal medulla, which contains high concentrations of opioid peptides derived from proenkephalin (for enkephalins) and proopiomelanocortin (for endorphin).[2] Opioid peptides are stored in chromaffin cells and are released together with adrenalin during stress. Human pheochromocytomas contain high levels of methionine-enkephalin and leucine-enkephalin immunoreactivity, often several times higher than concentrations reported for normal adrenal medulla.[3] The opioid peptides have hypotensive effects in anesthesized laboratory animals and may play a role in the pathogenesis of shock.[4] The opioid peptides have a variety of other biological effects; these include dopamine-potentiating, analgesic, behavioral, and immunomodulatory properties.[5] It is plausible that some of the paraneoplastic syndromes associated with pheochromocytoma and other neuroendocrine tumors are related to the excess production of these opioid peptides. Plasma levels of endorphins or enkephalins were not reported by Kirby and her associates; however, the measurement of these substances may be important in correlating certain clinical phenomena with the pharmacology of tumors.

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2. Evans CJ, Erdelyi E, Weber E, et al: Identification of pro-opiomelanocortin-derived peptides in the human adrenal medulla. Science 1983; 221:957-960
3. Eiden LE, Giraud P, Hotchkiss A, et al: Enkephalins and VIP in human pheochromocytomas and bovine adrenal chromaffin cells, *In* Costa E, Trabucchi M (Eds): Regulatory Peptides: From Molecular Biology to Function, New York, Raven Press, 1982, pp 387-395
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5. Miller GC, Murgo AJ, Plotnikoff NP: Enkephalins: Enhancement of active T-cell rosettes from lymphoma patients. Clin Immunol Immunopathol 1983; 26:446-451

Tick Removal

TO THE EDITOR: The interesting article on ectoparasites by Pien and Grekin[1] stimulated me to share my experience in trying to control ticks and fleas. A simple and safe method of tick removal is to coat the tick with petroleum jelly (such as Vaseline), wait ten minutes and then gently remove the tick with forceps, grasping it very close to the skin of patient or pet. The tick can be removed intact without problems associated with application of strong chemicals or burning. In addition, petroleum jelly based ointments are readily available in most homes.

Fleas have become increasingly troublesome as flea control pet collars have lost effectiveness. DDT powder, recommended by the authors, is not available in the United States. Many people find malathion and pyrethrins unacceptable because of allergenicity. An alternative is 5% carbaryl powder. While there are also objections to carbaryl, it is reasonably effective and inexpensive.

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Relation Between Surgical Volume and Postoperative Wound Infection

TO THE EDITOR: In 1981 Farber and co-workers[1] reported that for appendectomy, cholecystectomy and herniorrhaphy the fewer operations done annually in a given institution, the greater the incidence of postoperative wound infection. They concluded that their study "provides additional data clearly demonstrating that morbidity is higher in hospitals performing very little surgery." In discussing these findings, Richards[2] asked whether "the data in this study would have more value if the authors had also compared differences in surgical volume and incidence of wound infections *per physician* and then contrasted these differences with hospital size." Farber and associates[3] agreed "that the data in our